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***USNORTHCOM***  
***Integrated***  
***Architecture:***  
***A Means to an End***

14 September 2004

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# Overview



- **United States Northern Command – Who We Are**
- **Architecture in the Federal Government**
- **Architecture Development & Processes at US Northern Command**
- **US Northern Command Architecture Tool**
- **US Northern Command Architecture Status and Progress**

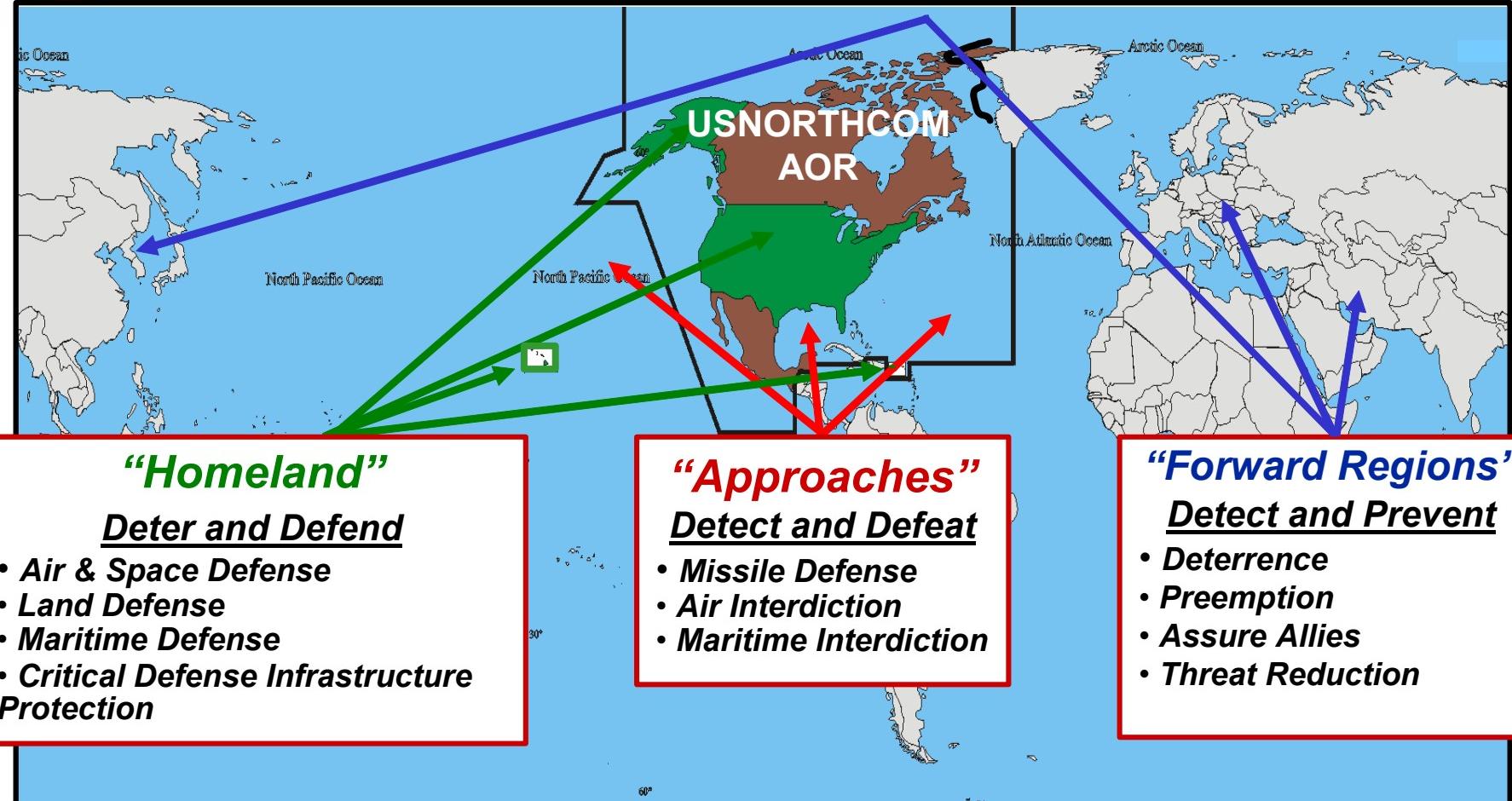


# *Mission & Vision Statements*

*United States Northern Command conducts military operations to deter, prevent and defeat threats and aggression aimed at the United States, its territories and interests within assigned areas of responsibility; as directed by the President or Secretary of Defense, provides military assistance to civil authorities, including consequence management operations*

*Deter, Prevent, Defeat, Mitigate:  
Protecting Americans where they live and work*

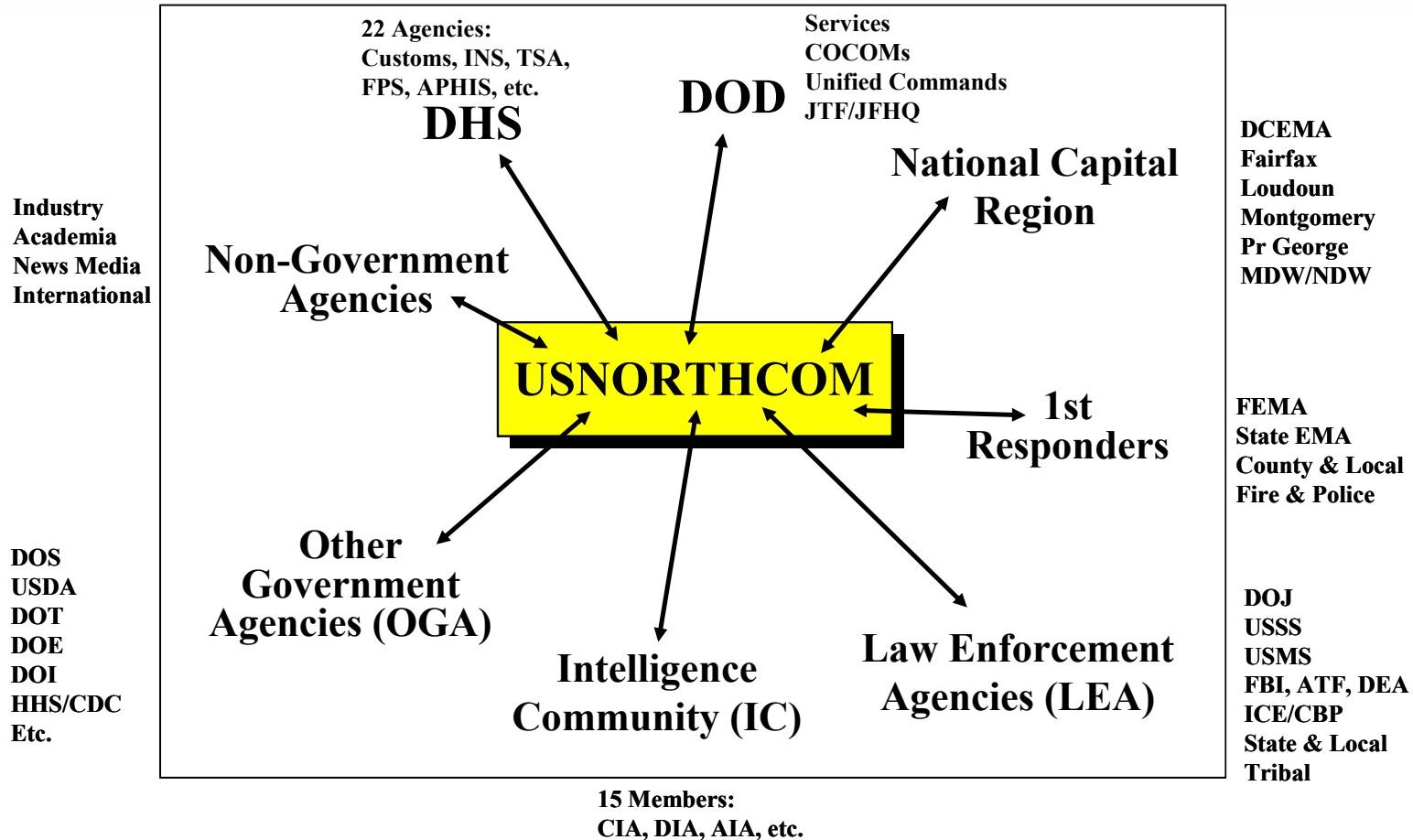
# Concept of Operations



*USNORTHCOM Layered Defense Concept*



# *Connectivity - Communities of Interest*



*USNORTHCOM must interoperate with  
over 600 other agencies/entities*



# *Architecture in the Federal Government*

- **GAO Enterprise Architecture Management Maturity Framework (EAMMF)**
  - **Stage 1:** Creating awareness
  - **Stage 2:** Building the management foundation
  - **Stage 3:** Developing products
  - **Stage 4:** Completing products
  - **Stage 5:** Leveraging to manage change
- **2001 survey of 93 federal departments and agencies:  
100% below Stage 5 (83% in Stages 1 or 2)**
- **2003 survey of 96 federal departments and agencies:  
99% below Stage 5 (90% in Stages 1 or 2) (7 years after Act)**

*Architecture is not easy to implement--  
Average stage was 1.33 in 2003*



# Architecture Primary Functions

- Identify DOTMLPF gaps, shortfalls, and duplications
- Identify prioritized solutions for the DOTMLPF gaps, shortfalls, and duplications (linked to strategic objectives, i.e., strategic vision key result areas, command critical capabilities, and Joint Mission Essential Tasks)
- Identify funding profiles for the DOTMLPF solutions
- Identify timelines for implementing the DOTMLPF solutions
- Identify technical standards and compliance for the N-NC information exchange environment
- Work subordinate unit mission needs to include JTFs, OPCON forces, etc.
- Manage the Enterprise Architecture as a Program

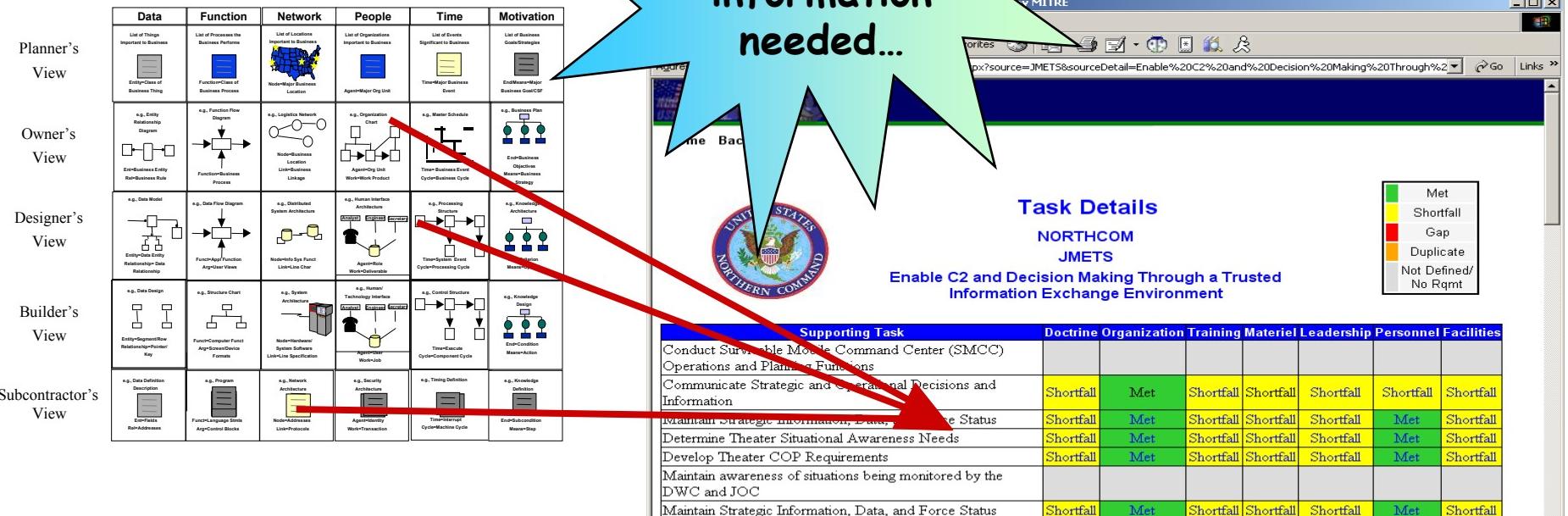
*Focus on the primary uses of the architecture data  
as we develop a net-centric architecture approach*

# Decision Support



1

Gather N-NC enterprise information: mission, people, schedule, \$\$, etc...



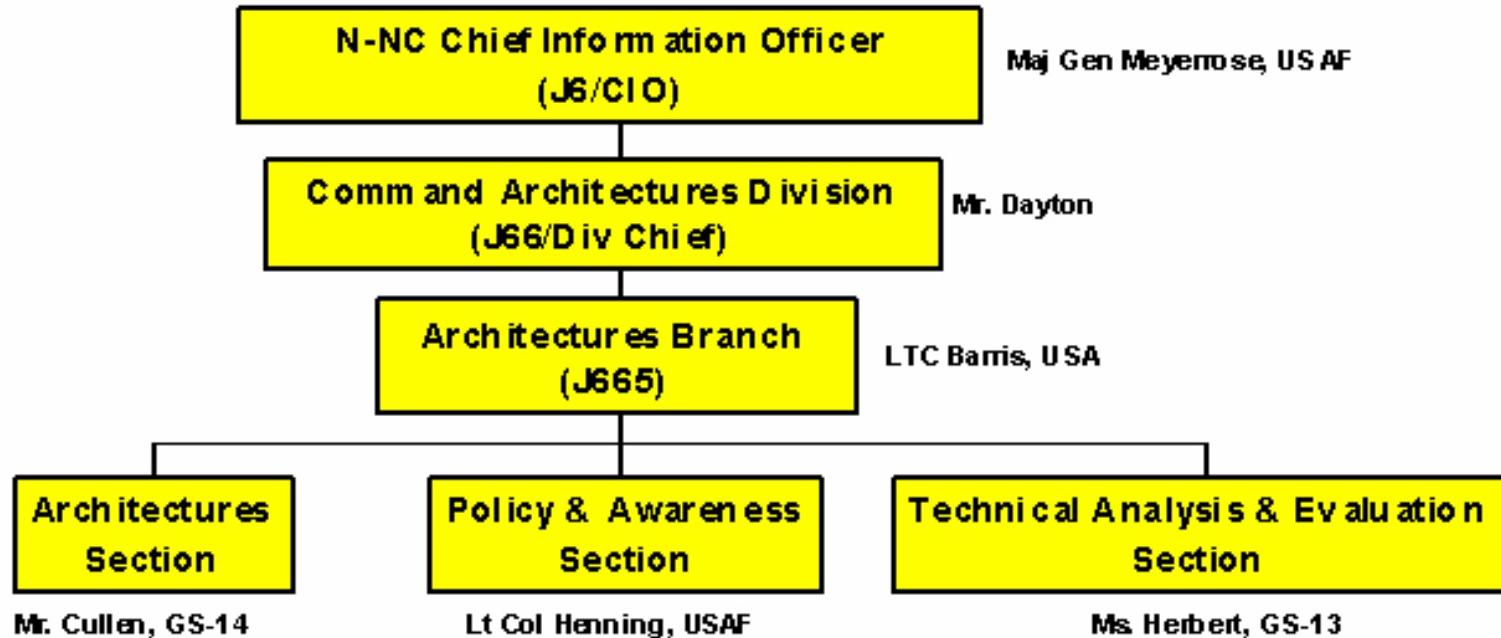
Combine data elements to answer questions or produce needed products

3

...combine into products needed to help analyze the issue and make a decision



# *Chief Architect's Organization*

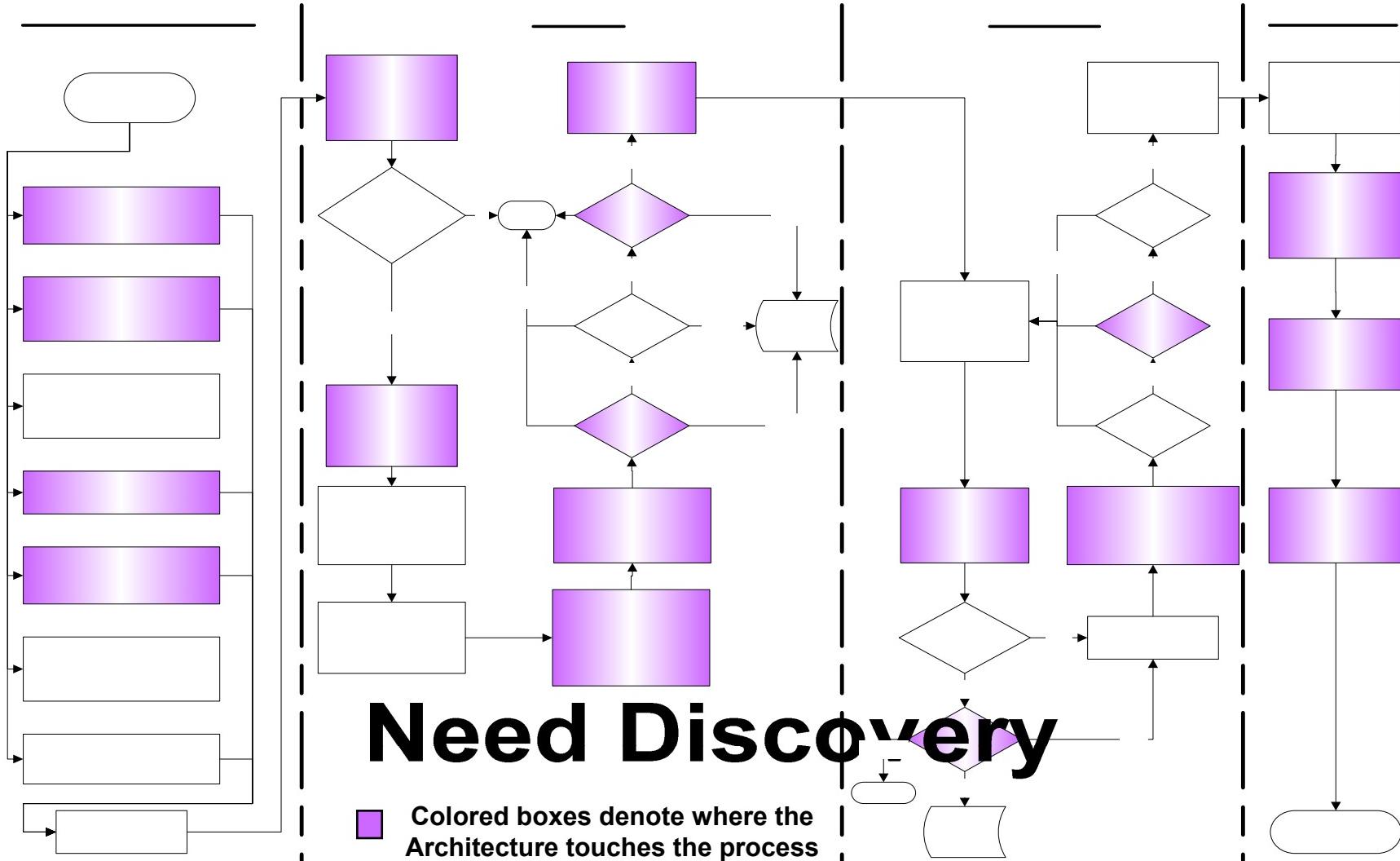


Roles/Functions	EAV/CARDS Database "Baseline" & "Target" Views Ops/Sys Architectures Transition Planning/B&S Mission/CONOPS Compliance Contractor Mgmt/Oversight	EAMMF Compliance Architectures Policy Architectures Library Architectures Awareness Architectures Funding IT Investment Management Support	Technical Standards and Views Technical and Security Compliance Technical Reference Model Life Cycle

*Managing the architecture effort  
with a Program Management Office (PMO)*

# Integrated Process

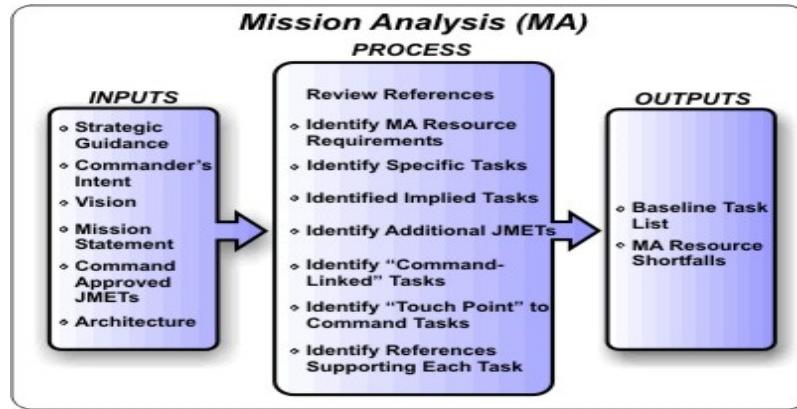
## Information Sharing Capabilities Management Process



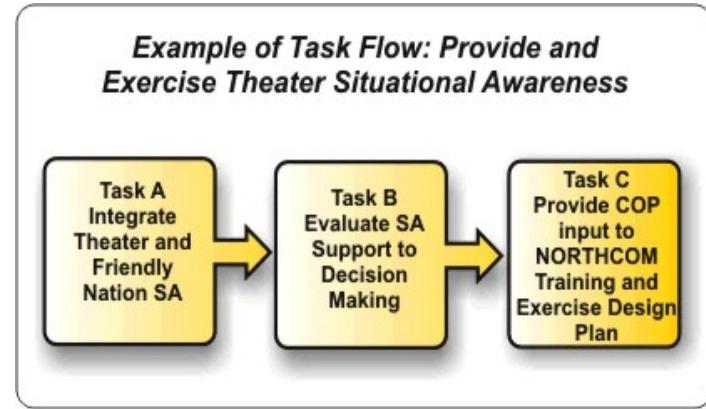


# Enterprise Architecture Process

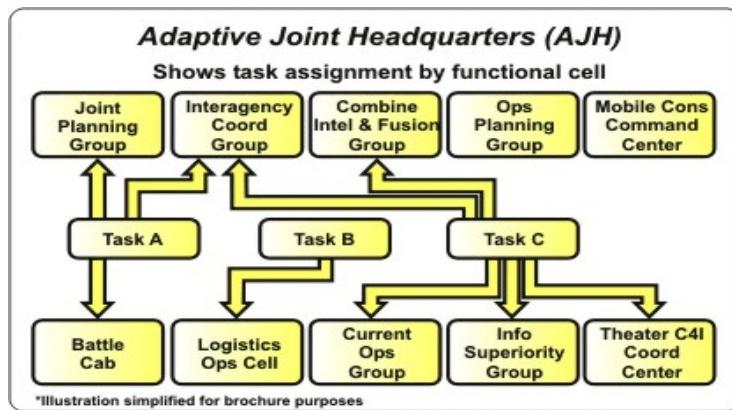
## Step 1: Mission Analysis



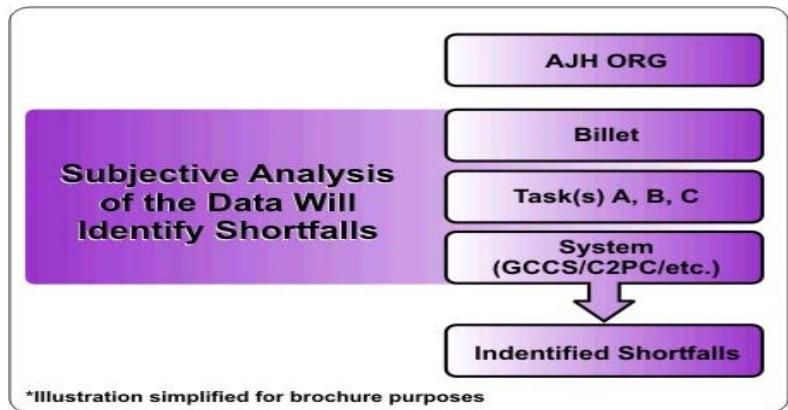
## Step 2: Link Tasks by Info Exchange



## Step 3: Map Tasks to Org Structure



## Step 4: Identify DOTMLPF Needs



*Architecture identifies gaps, shortfalls, and duplications*



# *Adding Capabilities – Block & Spiral Approach*

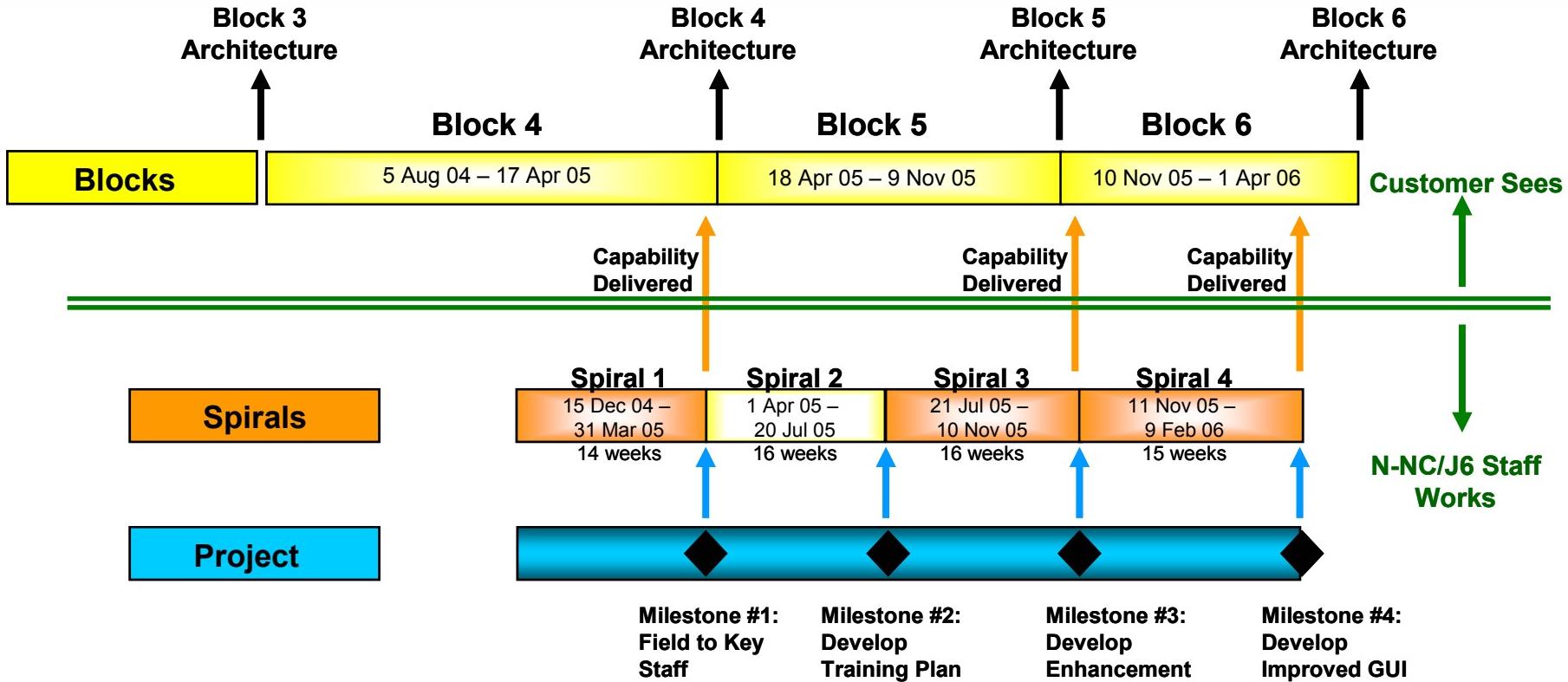
**Spirals – Development cycles ≤ 16 weeks assigned to each project to focus the efforts of project managers, developers, and IT Investment Management staff. Development focus**

**Blocks – Periods of time (linked to command-level events) that focus on providing capabilities to the commands. User capabilities focus**

*Spirals focus project management efforts  
Blocks focus on user capabilities*

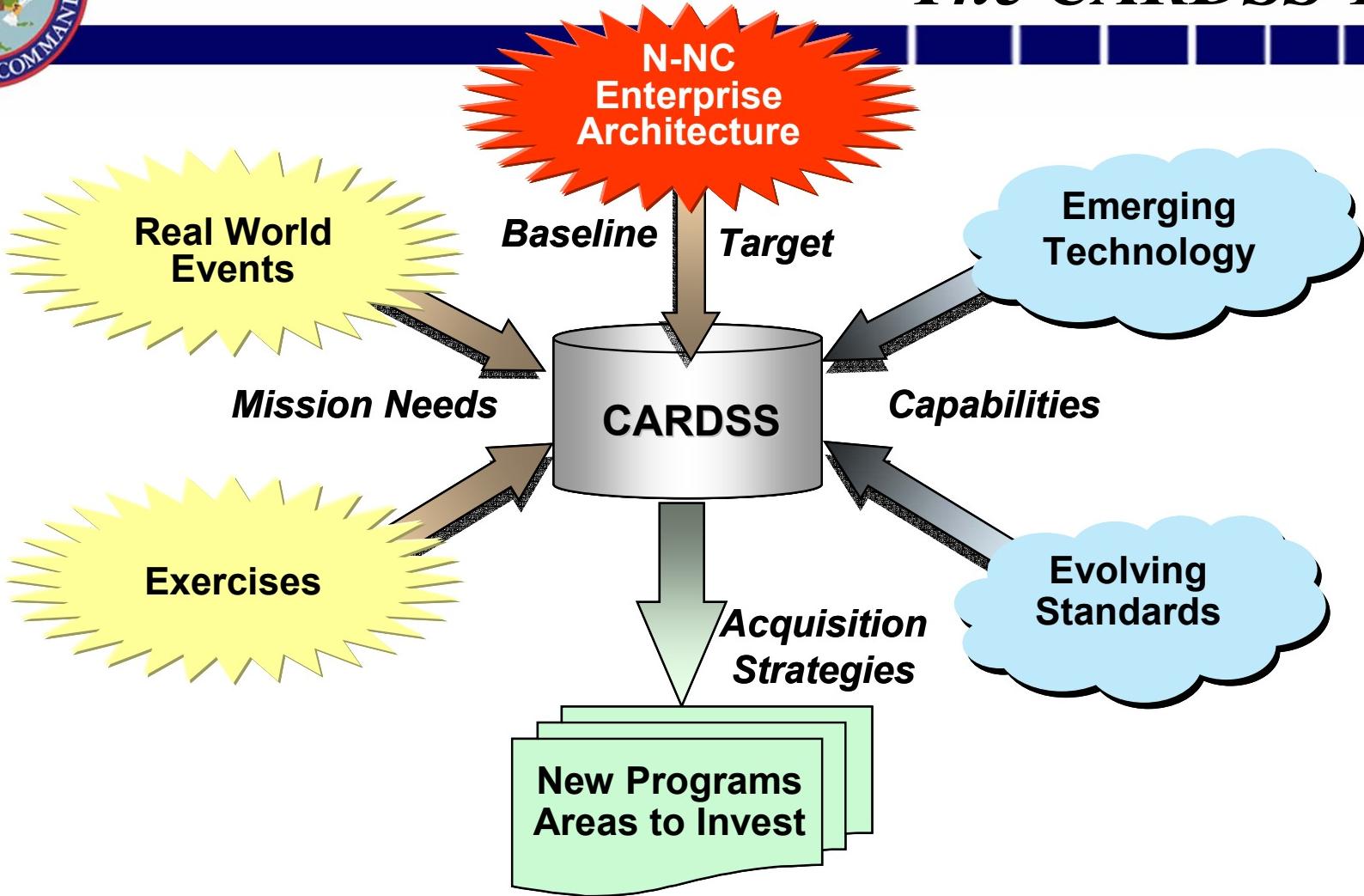


# Projects, Spirals, Blocks, & Architecture



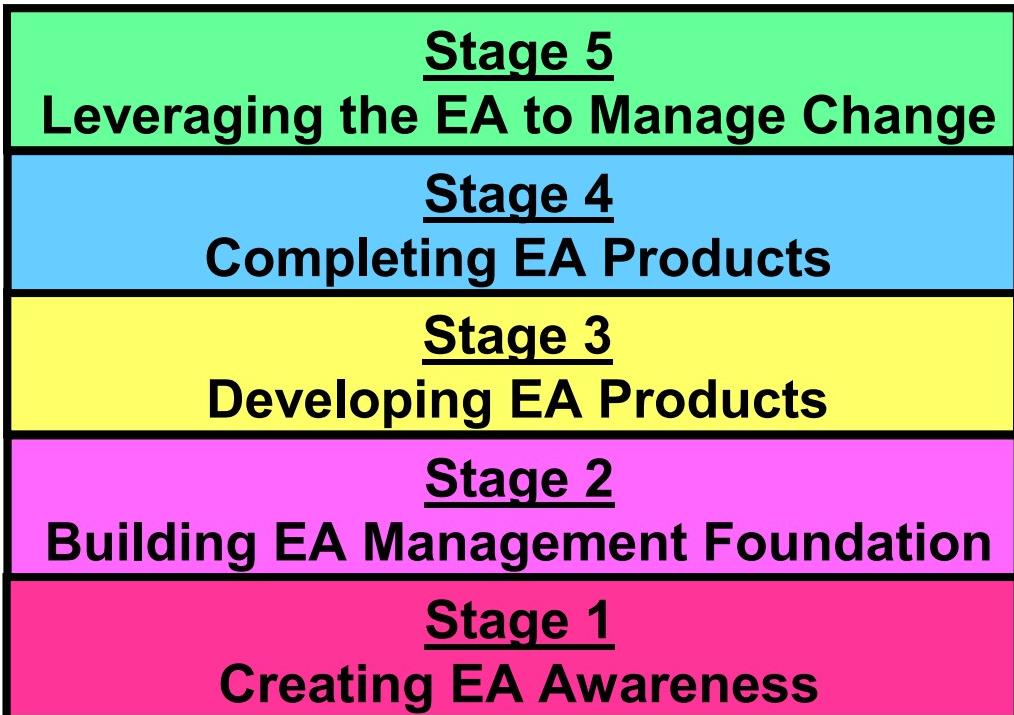
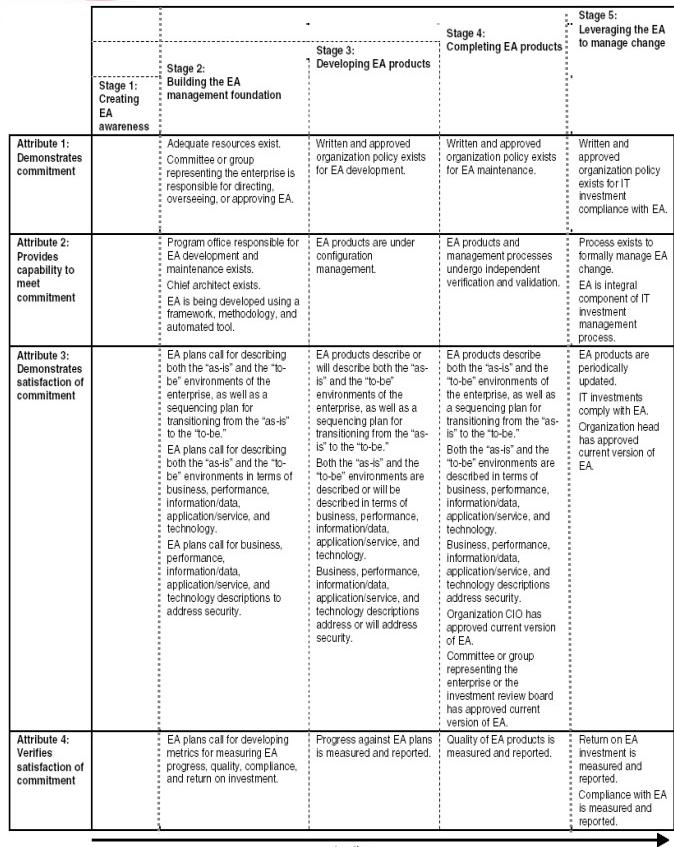
*Project development occurs in Spirals,  
Upgrades occur in Blocks,  
Target Architectures come from Block upgrade plans*

# The CARDSS Tool



*Commands Architecture Repository and  
Decision Support Source*

# Assessing Progress



Source: GAO.

*Using GAO's Enterprise Architecture Management Maturity Framework (EAMMF) to assess progress*



# EAMMF Assessment

As of 15 Aug 04

<b>STAGE 1: Creating EA Awareness</b>	<b>STAGE 2: Building the EA Mgt Foundation</b>	<b>STAGE 3: Developing EA Products</b>	<b>STAGE 4: Completing EA Products</b>	<b>STAGE 5: Leveraging the EA to Lead Change</b>
If an organization has plans to develop and use an architecture yet hasn't satisfied the criteria in stage 2, it is considered in stage 1.	1. Adequate resources exist  2. Committee or group representing the enterprise is responsible for directing, overseeing, or approving EA.  3. Program office responsible for EA development and maintenance exists.  4. Chief Architect exists.  5. EA is being developed using a framework, methodology, and automated tool.  6. EA plans call for describing both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be."  7. EA plans call for describing both the "as-is" and the "to-be" environments in terms of business, performance, information/data, application/service, and technology.  8. EA plans call for business, performance, information/data, application/service, and technology descriptions to address security.  9. EA plans call for developing metrics for measuring EA progress, quality, compliance, and return on investment	10. Written and approved organization policy exists for EA development.  11. EA products are under configuration management  12. EA products describe or will describe both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be."  13. Both the "as-is" and the "to-be" environments are described or will be described in terms of business, performance, information/data, application/service, and technology.  14. Business, performance, information/data, application/service, and technology descriptions address or will address security.  15. Progress against EA plans is measured and reported.	16. Written and approved organization policy exists for EA maintenance.  17. EA products and management processes undergo independent verification and validation.  18. EA products describe both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be."  19. Both the "as-is" and the "to-be" environments are described in terms of business, performance, information/data, application/service, and technology.  20. Business, performance, information/data, application/service, and technology descriptions address security.	24. Written and approved organization policy exists for IT investment compliance with EA.  25. Process exists to formally manage EA change.  26. EA is integral component of IT investment management process.  27. EA products are periodically updated.  28. IT investments comply with EA.  29. Organization head has approved current version of EA.  30. Return on EA investment is measured and reported.  31. Compliance with EA is measured and reported.
<b>ELEMENT CRITERIA STATUS</b>				
<span style="background-color: green; border: 1px solid black; padding: 2px;"> </span> <b>SATISFIED</b>				
<span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span> <b>PARTIALLY SATISFIED</b>				
<span style="background-color: red; border: 1px solid black; padding: 2px;"> </span> <b>NOT SATISFIED</b>				

*Achieve Stage 5 by 30 September 2005 !!!!*

